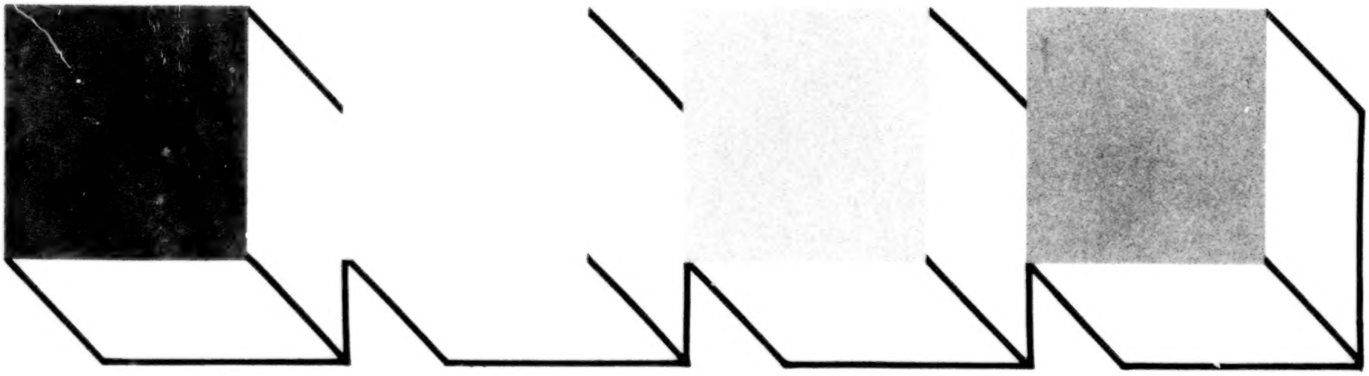
Item 274-P NS1.20:Sci2/2

Program Announcement

ORIGINAL

# Instructional Scientific Equipment for Undergraduate Science Education

**guide for
the preparation of proposals and
project and award management**



Closing Date: March 2, 1979

NATIONAL SCIENCE FOUNDATION
Division of Science Education Resources Improvement
Washington, D.C. 20550

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**Mailing Address for Inquiries:**

Instructional Scientific Equipment Program-ISEP
Division of Science Education Resources
  Improvement
National Science Foundation
Washington, D.C. 20550
(Telephone: 202/282-7033

**Closing Dates**

This announcement is intended for use in the ISEP program competition for FY 1979. ISEP closing dates and other program characteristics and limitations may change from year to year.

## SPECIAL NOTE

### Experimental Projects for Science Education Resources Improvement

ISEP and related programs of the Division of Science Education Resources Improvement (SERI) support a variety of activities designed to strengthen science education and research training in schools, colleges, and universities. From time to time, however, proposals or inquiries are received about potential projects that do not fully meet the requirements for existing programs, or, in some cases, overlap two or more programs.

The Division will entertain such proposals if the project:

1. Relates to the broad objectives of the Division;
2. Falls outside the guidelines of existing SERI programs; and
3. Shows promise for providing information and experience useful to the Division in improving the effectiveness of existing programs or in designing new programs.

Proposals meeting these criteria will be considered individually and may be submitted at any time. Prospective applicants must establish initial contact with the Division staff by phone or by a brief letter of inquiry that describes the intended project. Discussion may be initiated by contacting the ISEP or other SERI program offices or by writing to:

Experimental Projects
Division of Science Education Resources Improvement
National Science Foundation
Washington, D.C. 20550
(Telephone: 202/282-7777)

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# GUIDE FOR THE PREPARATION OF PROPOSALS AND PROJECT AND AWARD MANAGEMENT

## INSTRUCTIONAL SCIENTIFIC EQUIPMENT
## in
## Undergraduate Science Education

# I. GENERAL INFORMATION

### INTRODUCTION

The National Science Foundation, through its Division of Science Education Resources Improvement, offers programs designed to improve the capabilities of schools, colleges, and universities for education and research training in the sciences. The common purpose of these programs is to strengthen one or more institutional resources so that citizens (whether scientists or not) can most beneficially use science, both at work and in their personal lives.

### PURPOSE AND SCOPE

The purpose of the Instructional Scientific Equipment program is to facilitate the implementation of a well-planned new or improved undergraduate instructional program in one or more of the sciences by providing matching support for the purchase of necessary scientific equipment. Grants are awarded on a competitive basis (see proposal evaluation p. 5).

A successful proposal must demonstrate (1) the way in which the planned project will improve the present program of undergraduate instruction, (2) the appropriateness of the projected change to the student audience and to the development priorities of the department(s) involved, and (3) the necessity and suitability of the selected equipment to the described improvement. The objective of the program is to improve instruction, not to support projects based primarily on financial need or increased enrollments.

Those who prepare proposals should be aware of the provisions of Title VI-A of the Higher Education Act of 1965, the Instructional Equipment Grants Program, administered by the U.S. Office of Education (OE). Title VI-A offers support through matching-fund grants to institutions for the purchase of instructional equipment, materials, and related minor remodeling in all subject areas including the sciences. Application for these grants is made directly to individual state commissions which evaluate and approve projects in accordance with criteria and priorities established in an OE approved state plan. In addition, distribution of funds is subject to a state-by-state allotment. In contrast, ISEP funds only equipment acquisitions which are components of course improvement projects in science. Proposals are submitted directly to NSF and are evaluated by peer review in national competition with all other ISEP proposals submitted in the current year. Thus, the National Science Foundation and OE programs are distinct, and it is important that proposers examine the guidelines for each program, including those governing the OE program in their own states, in order to make informed decisions about the agencies to which their proposals should be directed.

Proposals that do not fully meet the requirements stated in the following pages could possibly be considered as explained in the SPECIAL NOTE on the inside front cover of this document.

### ELIGIBLE INSTITUTIONS

Proposals to the Instructional Scientific Equipment program will be accepted from any university, 4-year college, or 2-year college in the United States or its territories that offers instruction in the sciences at the undergraduate level, *and which regularly enrolled students for the Fall term of 1976, as reported in Fall Enrollment in Higher Education, 1976*, National

Center for Educational Statistics, #NCES 78-310.

Members of a recognized "system" of institutions are each eligible as an individual institution when separated geographically and administratively from other campuses of the system. That is, such a campus must not be administratively subordinate to another campus in the system. A branch campus seeking separate eligibility should consult the ISEP program staff before submission of a proposal, and be prepared to provide appropriate details to support its request.

Formally organized consortia of such institutions which have established central offices and approved fiscal management capability, and which provide undergraduate science instruction, are also eligible.

## ELIGIBLE FIELDS

Support may be requested for activities in the mathematical, physical, biological, engineering, and social sciences, in the history and philosophy of science, and in interdisciplinary fields comprised of overlapping areas of two or more sciences. Those activities which are aimed at undergraduate science education of prospective teachers and which emphasize both science content and teaching methods are also eligible, as are the basic science components of technical or professional programs. However, the practice aspects of technical, clinical, health, social, and business fields are excluded. Example disciplines outside of the program are medicine, nursing, clinical psychology, social work, business administration, and the arts and humanities. Specific questions of eligibility may be resolved by making an inquiry to the ISEP Program Office.

## NATURE OF INDIVIDUAL PROPOSALS

Each proposal should define a project for improvement of the content of a discrete scientific instructional activity. A proposal must demonstrate that the plan is a logical step in developing the academic program in question; that informed, realistic planning has already taken place; that the staff is competent to carry out the project; and that the improvements proposed lack only the equipment for full implementation.

It is important that the equipment requested is appropriate for the project's objectives, but neither oversophisticated nor excessive in quantity. It is also important to note that obsolescence of equipment already held by the institution is not sufficient justification for ISEP support.

The Foundation aims to support projects with maximum potential for continuing impact. Each proposal should, therefore, clearly show the institution's plans for extended care and maintenance of the equipment.

Most projects will deal with improvements in a single course, a single discipline, or a single department. Proposals that are, of necessity, prepared cooperatively by several teaching units seeking curricular coordination at an interdisciplinary level are encouraged. However, independent proposals prepared by several disciplines should not be combined and submitted as an interdisciplinary proposal. The only multi-departmental (multidisciplinary) requests that can be accepted—in contrast to the interdisciplinary ones noted above—are those in which several departments propose to make cooperative use of a single major piece of equipment (e.g. X-ray diffraction equipment, electron microscope) or an assemblage of related pieces of equipment (e.g. an instrumental analysis ensemble).

In cases where improved use of the student's laboratory time is the main objective (through acquisition of timesaving devices like single-pan balances or computation equipment), the justification must rest upon what will be done with the time being saved—what specific experiments will be added, what additional phenomena will be explored, what individual problem work will be introduced, etc.

It should be emphasized that instructional improvement as used herein is not restricted to formal courses and laboratories traditionally associated with undergraduate instruction. Projects to improve honors programs, undergraduate student research, and independent study are also eligible, as are those designed to improve programs in technician or pre-service science teacher education or to initiate or improve undergraduate level instruction aimed at acquainting nonscience majors with methods and principles of science and/or the impact of science and technology on society.

## FISCAL AND PROPOSAL LIMITATIONS

Each institution receiving a grant must agree to provide matching funds in an amount equal to or greater than the funds provided by the Foundation, with the total amount to be used for the acquisition of the instructional equipment listed in the proposal. Matching funds may be either from non-Federal or Federal sources. NOTE: Funds from an ISEP grant, or the institutional contribution to it, cannot be counted as an institutional contribution to another Federally supported project.

The Foundation has only limited funds to support this program; thus it is imposing the following restrictions: (1) No proposal may request more than $20,000 from NSF, which implies that project costs in excess of $40,000 must be funded by overmatching. Institutions are free to overmatch in situations where they deem it desirable. (2) A department (or discipline) within an institution may receive only 1 single department (or discipline) ISEP award in any 3-year period. *Thus, a department (or discipline) which received an ISEP award in either FY 1977 or FY 1978 is not eligible to submit a proposal in the current year.* However, a department is eligible to participate in *one* interdisciplinary ISEP award in a given 3-year period, in addition to any single department (or disciplne) award it may receive in that same period. (3) Each institution is limited in the number of ISEP proposals it may submit this year, as shown in the table below. The only acceptable source for the undergraduate enrollment data is *Fall Enrollment in Higher Education, 1976*, National Center for Education Statistics, # NCES 78-310.

| Opening Fall 1976 FTE Undergraduate Enrollment* | Maximum Number of Proposals |
|---|---|
| Under 2,500 | 3 |
| 2,500-9,999 | 4 |
| 10,000-19,999 | 5 |
| 20,000 or more | 6 |

* Sum of F.T.E. enrollments for full and part-time students as reported in NCES 78-310.

It is each institution's responsibility to decide which of its several possible proposals will be submitted to the Foundation, and how this selection is to be made. (4) A consortium (see section entitled Eligible Institutions) may submit one proposal per yearly closing date. Participation in a consortium proposal will not affect the eligibility of an institution or a department within an institution.

An institution may obligate its matching funds, by contract or purchase order, at any time following the closing date under which the awarded proposal was submitted, but before the grant expiration date specified in the official grant document. *This provides a period in excess of two years during which the institution must fulfill the agreement to match NSF funds as described in the award proposal.* To count as matching, these funds must be used specifically for the purchase of equipment listed in the proposal.

## ELIGIBLE ITEMS

The primary use of each of the budgeted items must be for the benefit of undergraduate science instruction. There is no objection to any item's serving additional purposes in the department at times it is not being used for undergraduate instruction, but these ancillary functions neither form nor augment the justification required for its inclusion in this program.

Proposals are limited to requests for funds under the following categories of items:

1. Scientific Equipment—to be used in any phase of undergraduate science education. *The Foundation defines supportable scientific equipment as having a minimum functional unit acquisition cost of $300 or more and an expected service life of 1 year or more.* This unit cost requirement applies also to category 6. A functional unit must consist of either a single piece of scientific equipment or a group of equipment items each of which is essential to the normal operation of a combined unit. General purpose equipment, such as air-conditioners and air, land, or sea vehicles may be included only if specifically justified in the proposal as essential to the scientific and educational objectives of the project.
2. Teaching Aids—itemized films, models, charts, and similar audiovisual equipment; projection and related equipment; teaching machines, etc., if justified as essential to the scientific and educational objectives of the project. The provisions of Title VI-A of the H.E.A. of 1965 should be considered for equipment which will not be employed for

science-related activities, since ISEP supports only equipment to be used in science instruction.

3. Reference Materials—itemized scientific journals and secondary reference works, binding of scientific journals, microprint cards, microfilm, etc.; such requests not to exceed 10 percent of the total project budget. Purchases of this nature are not allowable unless it can be established that they are absolutely necessary to carry out the plan of improvement proposed. Proposers should study the provisions of Title II of the Higher Education Act of 1965, which provides assistance to institutions of higher education for the acquisition of library materials needed for expanded responsibilities in research, teaching, and student use.

4. Construction of Equipment—fabrication, including materials and labor, where sufficient justification (supported by schematic drawings and part lists) can be given. Since it is not the purpose of equipment grants to provide for design and development of scientific and educational equipment, a detailed explanation of the advantages of proposed units over commercially available items must accompany requests for equipment construction funds.

5. Hand and Machine Tools—specifically intended for the fabrication or repair and maintenance of scientific equipment, such requests not to exceed 10 percent of the total project budget.

6. Computing Equipment—digital, analog, analog-digital hybrid computers, mini- or micro-computers, or ancillary equipment that provides remote access to digital computing equipment is permitted provided that this type of equipment can be fully justified in terms of the specific curricular improvements it makes possible. Rental or lease-purchase of such equipment with grant funds will be considered (1) if it can be demonstrated that such arrangements offer clear advantages over outright purchases, and (2) if the proposal contains assurances that the grantee is prepared to assume responsibility for the continuation of equivalent services after the grant expires.

7. Safety Equipment—such as fire control devices, fume hoods, etc. may be purchased under this program as necessary for the safe utilization of equipment to be purchased under this proposal. Such purchases may not exceed 10 percent of total equipment costs (1, 4, and 6 above).

8. Expendable Items—list general types of expendable items, i.e. chemicals, glassware, etc., required for operation of scientific equipment requested in categories 1 and 6 above. These items must be limited to 2 percent of the total cost of "Scientific Equipment" and "Computing Equipment."

9. Shipping Costs—reasonable estimates, as opposed to a flat percentage, should be used.

10. Taxes—State and local taxes, if applicable, are eligible.

## INELIGIBLE ITEMS

Laboratory furnishings or general utility items, such as benches, tables, desks, chairs, laboratory carts, storage cases, routine supplies, general expendables, etc. are not eligible items. Maintenance or service contracts are ineligible. Requests for indirect, overhead, building modification or construction, or installation costs will not be considered.

A flat percentage inflation allowance is not eligible under these guidelines.

## DURATION OF GRANTS

Grants in support of ISEP activities normally assume that equipment will be acquired during a 2-year period. Any request for a no-cost grant extension beyond the expiration date specified in the grant letter must be fully justified, endorsed by the authorized institutional representative designated by the grantee institution, and received by NSF at least 45 days prior to the expiration date (see also p. 12).

# II. PROPOSAL EVALUATION

## PROCEDURES AND CRITERIA

In selecting instructional equipment proposals to be supported, the Foundation is assisted by panels of scientists and educators drawn from the academic community, research organizations, and professional scientific societies. Recommendations of these panels constitute a major element in the Foundation's determination of whether a grant will be made. Final decisions on proposals to be supported will be made by NSF. Selection will be made in merit order, except that in the case of proposals of substantially equal merit (as determined by the merit review process), use may be made of other criteria such as geographical or disciplinary distribution of funds, distribution of awards among appropriate types of institutions, or others determined to be consistent with Foundation policy and legislative intent.

*A draft of the review form to be used by panel members appears in the appendix of these guidelines. This form is provided for consideration in the preparation of proposals.*

Review panels base their conclusions and recommendations on information contained in the proposal. It cannot be assumed that the reviewers are acquainted with the previous experience of the institution. Primary consideration will be given to the degree of academic improvement to be expected if the proposed project is supported.

Each proposal will be examined as an entity, but elements of the budget may be negotiated with the applicant. Thus, partial support may be granted.

## ACCESS TO PEER REVIEW INFORMATION

After final decisions have been announced, the Foundation will, upon request, inform the project director of the reasons for its decision on a proposal. Verbatim copies of reviews, not including the identity of the reviewer, will be made available to respective project directors upon specific request.

## NSF EVALUATION OF PROGRAMS

Proposers should be aware that the Foundation may, as a part of its own program evaluation activities, carry out in-depth evaluations of selected awarded projects through independent third parties. Thus, proposers should be prepared to cooperate with evaluators eventually retained by the Foundation to analyze both the institutional context and the impact of any supported project.

# III. PROPOSAL PREPARATION

A proposal to this program should consist of the following parts, arranged in the listed order:

- Cover Sheet
- Detailed Budget (Equipment List)
- Project Summary Form
- Narrative (Limited to 12 double-spaced pages)
- Appendices (Optional).

## COVER SHEET

The cover sheet should follow, as closely as possible, the sample shown in the appendix of this Guide and be used as the first page of the proposal. This sample cover sheet may be completed and duplicated directly. One copy must bear the signatures of the proposed project director and the administrative official who is empowered to commit the proposing organization to the conduct and prudent management of the project if NSF agrees to support it. It is important that the name, title, and complete mailing address of the project director and the official signing for the institution be typed in the appropriate places on the cover sheet.

Social security numbers are used by the Foundation to monitor and facilitate the receipt and processing of numerous proposals, as well as to maintain award data. The number is solicited pursuant to the general authority of the Foundation under the NSF Act of 1950, as amended. However, submission of social security numbers is voluntary and refusal to disclose a social security number will not affect an institution's eligibility for an award.

In the event that funds for this project are being requested from another Federal agency or another Foundation program, this must be indicated on the cover sheet. If they are not being so requested at the time of proposal submission, but are requested subsequently (prior to the Foundation's anticipated ISEP announcement date) a letter so stating should be sent simultaneously to the ISEP office. Indicate the NSF proposal number if it has been assigned.

## BUDGET (Equipment List)

A complete, detailed list of anticipated equipment acquisitions with costs should immediately follow the cover sheet. It should be arranged in the following categories, defined on pages 3-4, with a subtotal shown for each:

1. Scientific Equipment
2. Teaching Aids
3. Reference Materials
4. Construction of Equipment
5. Hand and Machine Tools
6. Computing Equipment
7. Safety Equipment
8. Expendable Items
9. Shipping Costs
10. Taxes

This detailed budget should list all individual items by a descriptive name, and the probable brand, model, and price. Where a functional unit consists of a combination of items, these should be clearly grouped as such in the budget. The scientific equipment category should be subdivided by function or by course so as to correspond as closely as possible with Section C of the narrative which follows. Each item should be numbered so as to be consistent with the categories above and to facilitate reference to and from the justifications presented in the narrative. Following the total amount of equipment costs, list the actual dollar amount being requested from NSF. Note that the amount requested from the National Science Foundation cannot exceed the lesser of either 50 percent of the total budget or $20,000. Please round the requested amount to the nearest $100.

## PROJECT SUMMARY FORM

Use the form provided in the Appendix, single space if necessary. The summary should be a concise description of the project, limited to 22 pica or 18 elite typewriter lines. It should, contain a statement of objectives, an outline of project operations, and a description of anticipated outcomes. *The summary should be written so that a layperson can understand the use of Federal funds in support of the project.* It should, therefore, be worded with considerable care, in a manner suitable for distribution to the public.

*IMPORTANT NOTE:* The information provided on the "Project Summary Form," especially the field of science and engineering and major discipline codes, is used by the program staff for a variety of purposes, including the proper assignment of proposals to evaluation panels. Two separate entries selected from the list on page 21 must be made under items 4 & 5, as follows:

*Major Discipline Classification:* Enter only one.

*Field of Science and Engineering Codes:* Enter at least one but not more than five codes in descending order of importance. For example, if computer-related activities are being developed for an analytical chemistry laboratory, enter at 4, CH, and at 5, CA12, NF55 (or MD21).

## NARRATIVE

The narrative presents most of the information that determines whether or not a grant will be awarded. It is essential that the narrative be clear and complete, yet concise, and free from repetition or from discussion of minor points. Readability, in clarity of type as well as in order and economy of writing, is important in making the academic and scientific merit easier to discern. *Each of the stated review criteria shown on the "Individual Reviewer Form" should be clearly addressed in the proposal.*

This section must not exceed 12 numbered double-spaced pages. Reviewers will not be responsible for studying additional pages. Information applicable in more than one place may be referred to by page and paragraph. Appended information should be restricted to tabular presentations of items required to supplement the narrative (see item D. in the outline below). Such information should be cross-referenced to the appropriate portions of the narrative. Use of tabular form for reporting details is encouraged.

The narrative should be written to conform to the following outline:

A. Need

**The Present Situation—**This section should answer the question: "What is currently missing from the curriculum or is not being done effectively in the course which needs to be improved?" The section should consist of a brief description of perceived deficiencies. Enough information should be included about related courses and the student audience to establish the academic context in which the need exists. A realistic estimate of the number of students affected by the proposed project over a 5-year period is to be included. These projections should be substantiated by recent experience, and reinforced by a graphic or tabular presentation of enrollments and trends over the past 3 years.

B. Project Description

**The Improvement Plan—**This section should answer the question: "How is the course or curriculum to be improved?" It should consist of a detailed description of the specific improvements intended and of how these improvements are expected to rectify the problems discussed in the preceding section. Specific experiments, student projects, and/or demonstrations that would be conducted with the new equipment must be presented in terms of the scientific principles or phenomena to be taught, and in terms of the didactic methodologies to be employed. This portion of the narrative must enable a group of colleagues to judge the suitability of the planned change for the intended student audience in the academic setting described. Note that both scientific and pedagogical aspects of the proposed project will be weighed in an effort to assess the relative improvement in science education that would be realized through the funding of this project.

C. Equipment

1. **The Equipment Request—**This section should answer the question: "Is each item of equipment requested actually needed to implement this improvement, and is it the right piece of equipment for the job?" It should consist of some brief indication as to exactly *how* each major equipment item requested will be used to effect *what* instructional improvement. Logical groupings of items should be made to minimize repetition, with each entry cross-referenced to the item numbers given in the detailed budget. Special defenses should appear here to explain requests for apparatus of a quality or cost not usually encountered in undergraduate instruction, or which appears to be at variance with the academic setting in which the project would operate. Such defenses must be keyed to

improvements desired in undergraduate instruction. Therefore, proposers are cautioned against providing arguments strictly based on enhancement of graduate-level courses, improvement of faculty research capabilities, replacement of equipment, or other activities outside the scope of ISEP.

*It is the purpose of this part of the proposal to establish the precise correlation between the subject-matter improvements described in the previous sections and the list of equipment requested. In event of a grant, items not adequately justified or not germane will be deleted from the authorized list of purchases.*

2. **The Equipment on Hand—**This section should answer the question: "Has the proposer carefully surveyed his current assets and planned to take maximal advantage of them?" It should consist of a list indicating existing or anticipated major equipment that will be available for the project, but is not included in this request. (See also certification requirement under "Special NSF Requirements Involving Equipment" on p. 10).

3. **Equipment Maintenance—**This section should answer the question: "Is a reasonable plan presented to insure a maximum useable lifetime for the equipment?" This relates to the institutional commitment to this project. Each proposal should therefore briefly but clearly show the institution's plans for extended care and maintenance of the equipment.

D. Personnel

1. **Faculty Expertise—**This section should answer the question: "Does the department presently have the personnel and knowledge to successfully complete this project?" It should contain enough information on the present faculty of the academic unit seeking support to convince reviewers that the technical expertise to carry out the proposed project is already resident on the campus. Special attention should be given to the individual named to direct the project. Since the effective operation of the project depends in large measure on the project director's knowledge of the discipline, the curriculum, and the equipment, this person must be a member of the faculty of the disciplinary unit receiving support. The vitae must indicate that the project director is an appropriate person to direct this particular project. Only one person may be named as the project director for the proposal, but brief meaningful curricula vitae of other faculty members involved in the project, emphasizing experience relevant to the project, should also be included. The latter may be placed in an appendix, if desired.

2. **Information on Current or Proposed Projects—**Each proposal must list all current projects, in addition to the proposed project, to which the senior personnel have committed a portion of their time, whether or not salary for the person involved is included in the budgets of the various projects. This information should include the titles and dates of current grants or contracts, the source of funds, annual budget levels, and the person-months devoted to each project by each of the senior personnel. The proposal must also provide analogous information for *all* other *proposed* projects which are being considered by, or which will be submitted in the near future to, other possible sponsors including other Foundation programs. Concurrent submission of a proposal to other organizations will not prejudice the review by the Foundation. This list may be located in an appendix.

E. Evaluation

**Assessment of the Project—**A discussion of the manner in which the project will be reviewed to determine its overall impact and to provide feedback for possible further project development should be included here.

## APPENDICES

Material that is supplementary to the text of the proposal may be included in appendices. Institutional catalogs, departmental curricula, or other general material should not be included. Each appendix should be tabbed or printed on colored paper or prepared in some manner to make it easily distinguishable from the body of the proposal. Voluminous appendices cannot be read by reviewers in the time available for proposal evaluation.

# IV. PROPOSAL SUBMISSION

## MATERIALS REQUIRED

Fifteen (15) legible copies of the complete proposal, four (4) *extra* copies of the cover sheet, four (4) *extra* copies of the project summary form, and one (1) *extra* copy of the equipment budget should be submitted in a single package to:

Central Processing Section for
Instructional Scientific Equipment—ISEP
National Science Foundation
Washington, D.C. 20550

Hand-delivered copies should be taken to Room 223 at 1800 G Street, N.W., Washington, D.C. 20550.

To facilitate prompt acknowledgement of the arrival of the package at its destination, the project director should cut out two of the postcards on the back cover of this Guide. Fill them in to identify the proposal, self-address one card, address the other to the official authorized to sign the Cover Sheet, and attach them firmly to the Cover Sheet of the Signature Copy. When the package arrives, the date of receipt and an assigned Proposal Number will be stamped on the cards before they are returned, so that the proposer and the Foundation can refer to this number in all future correspondence about the proposal. If an acknowledgement card with the proposal number endorsed upon it is not received within 3 weeks following the closing date, the proposer should telephone the Central Processing Section promptly at 202/632-4120.

Secure packaging is mandatory. The Foundation cannot be responsible for the processing of proposals damaged in transit.

Do not send separate "information" copies or several packages containing parts of a single proposal. Do not staple the extra cover sheets, project summary forms, or equipment budgets together or to a proposal.

Each copy of the proposal should be on standard size duplicating or mimeograph paper of regular weight, and stapled *only* in the upper left corner. The duplicating process should ensure legibility for at least 5 years. Typing should be double-spaced.

One copy must be signed by the project director and the administrative official who has been designated as the Authorized Institutional Representative.

## SCHEDULE

All proposals are due at the Foundation on or before the closing date shown on the cover of this Guide. Proposers are cautioned to be careful of unforeseen delays which can cause late arrival of proposals at the Foundation, with the result that they cannot be included in the evaluation procedures. Evaluation and processing will require approximately 6 months for completion and no information on proposal status will be available until formal notification is made simultaneously to all proposers in September, 1979.

Once notification of the Foundation's decision has been received, inquiries of a programmatic or technical nature should be directed to Instructional Scientific Equipment-ISEP, Division of Science Education Resources Improvement, National Science Foundation. Washington, D.C. 20550. All correspondence relating to proposals should cite the specific proposal number.

# V. OTHER CONSIDERATIONS IN SUBMITTING PROPOSALS

### ASSURANCE OF COMPLIANCE WITH THE CIVIL RIGHTS ACT

If the applicant university or college has not filed an Assurance of Compliance with Title VI of the Civil Rights Act of 1964, as required by NSF regulations, pertinent forms and a copy of the regulations may be obtained by writing to the Foundation's Division of Grants and Contracts. The required Assurance Form, when completed by the institution, should be submitted to the Division of Grants and Contracts. Once an Assurance Form has been submitted by the applicant organization, it covers all proposals subsequently submitted by any department or other unit of that organization. Individual Assurance Forms are not necessary for each application or for each proposal. If there is any question about whether or not an institution has filed an Assurance of Compliance, the institution's business office should be consulted.

### CONFIDENTIAL ASPECTS OF PROPOSALS AND AWARDS

A proposal that results in a grant becomes a part of the record of the Foundation's transactions, available to the public upon specific request. Information that the Foundation and the grantee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law; therefore, any information that the applicant wishes to have the Foundation consider as privileged should be clearly marked as such and sent in a separate statement, two copies of which should accompany the proposal.

A proposal that does not result in a grant may be retained by the Foundation. Such a proposal will be released only: (1) with the consent of the proposer; or (2) to the extent required by law. A proposal may be withdrawn at any time prior to final action thereon by the Foundation.

### GRANTEE MANAGEMENT AND ORGANIZATION DATA

If your institution has not received an NSF grant within the past 2 years, please fill out the Applicant Management and Organization Information card on the back of the brochure and attach it to the original copy of the proposal.

### SPECIAL NSF REQUIREMENTS INVOLVING EQUIPMENT

If a proposal for NSF support involves the purchase or lease of special purpose equipment, having a unit acquisition cost exceeding $10,000, it must contain a certification by the authorized organizational representative that the equipment is (a) essential and not reasonably available and accessible to the project and, if funded by NSF, will be subject to (b) reasonable inventory controls and maintenance procedures and (c) organizational policies designed to enhance multiple or shared use on other projects, if such other use will not interfere with the work on the project for which the equipment is being acquired.

Because of the lead time involved, it may not be practical for an institution to make this certification at the time of the initial proposal submission. In such cases, NSF will accept a statement to that effect in the proposal, with the understanding that the certification will be supplied before a grant is made.

# VI. PROJECT OPERATION

## GRANT ADMINISTRATION

Grants will be administered in accordance with the terms and conditions of the grant instrument.

An NSF grant is normally made to an organization, known as the grantee, rather than to the individual principal investigator or project director who proposed to conduct the project. Notification of an award is made by letter signed by the NSF grants officer. The grant instrument establishes a relationship between NSF and the grantee in which:

a. NSF agrees to provide financial support for the project to be performed, under the provisions of the grant instrument.
b. The grantee agrees to the performance of the project, to the prudent management of the funds provided by the grant and to the provisions of the grant instrument.

The grantee is free to accept or reject the grant. Normally, action to obtain Federal funds constitutes acceptance of a grant once it is made. However, in some cases, NSF may require written acceptance.

## CHANGES IN PROJECT OPERATION

*Foundation approval* should be secured prior to any major project changes, which include those:

a. Affecting the overall intent or scope of the approved project.
b. Involving a change in project director.
c. Involving a change in equipment valued at $300 or more (see modifications in Equipment Acquisitions).
d. Involving a time extension for completion of grant activities.

Requests for such changes should be addressed to the ISEP program office from the Project Director and be cosigned by the Authorized Organizational Representative. Direct correspondence to:

Instructional Scientific Equipment—ISEP
Division of Science Education
  Resources Improvement
National Science Foundation
Washington, D.C. 20550

## PROJECT DIRECTOR

- Operating within the policies and procedures of the parent institution and these Guidelines, the project director is responsible for the selection of equipment and its instructional use, and for the preparation of a final project report.

The effective operation of the project is, in large measure, dependent upon the project director's knowledge of the discipline, the curriculum, and the equipment. The project director must be a member of the faculty of the disciplinary unit receiving support.

All correspondence regarding the operation of the project and requests for modification of the equipment purchases must be prepared and signed by the project director.

- Change in Project Director

When it appears such a change is necessary, the authorized institutional representative must write the Foundation, requesting the change. The request should include the name of the newly nominated project director; though voluntary, inclusion of social security number would facilitate processing.

In the event a project director relinquishes active direction of the project and is not properly replaced, NSF support of the project will terminate.

## MODIFICATIONS IN EQUIPMENT ACQUISITIONS

Budgets for projects as approved shall be based upon equipment lists which were submitted with each proposal. *Other eligible items which are similar in nature or serve the same defined or basic instructional function and are in line with the plan for improvement of undergraduate instructon set forth in the application as original-*

*ly approved may be substituted or added.* Examples of possible reasons for such changes are as follows:

- The original instructional goal will be better accomplished by new items to be substituted.
- Limitations of availability or source of supply may compel substitution.
- Specifications of original items cannot be met by manufacturers.
- Substitutions are needed to accommodate changes in instructional curriculum or academic personnel.
- Advances in educational technology result in availability of better or more appropriate equipment.

When purchases from the approved equipment list, as modified above, are completed, the project director may use excess funds to make additional purchases only of eligible items which serve the stated purpose of the project.

When a grantee receives a gift of equipment from non-Federal sources that is identical or equivalent to items listed in the proposal, the full cash value of such gifts may be counted as institutional matching funds.

*Prior Foundation approval is required for changes* in any item costing $300 or more which involve any of the following:

- the substitution of one piece of equipment for another that performs an entirely different function; or
- the substitution of one piece of equipment for a similar item where the capability of the equipment is decreased; or
- the deletion from the equipment list of any item.

Whenever a change appears to be advisable, the project director should request the Foundation's approval, using NSF Form 650 *endorsed by the authorized institutional representative.* A copy of this form appears on pages 26 and 27 of this brochure. In most cases, the most convenient procedure will be to copy the required number of duplicates of this page and use them to submit the change request. *Note that all major change requests are to be submitted to the Instructional Scientific Equipment Program staff, using NSF Form 650 in quadruplicate.* Full justification for the change must be provided on the back of the form. Such requests should explain the reasons for change, show that the new equipment will be used in a manner that retains the spirit and intent of the original proposal, and establish that the substituted items will have an educational value at least equal to that of the intended deletions. When possible, the educational reasons for obviating equipment which is deleted should be given. *It is important to note that increased enrollment and/or obsolescence of equipment already held by the institution is not sufficient justification for a modification of the awarded equipment list.*

## PROJECT TIME EXTENSIONS

It is expected that projects will be completed within the time period specified in the grant instrument. Therefore, requests for no-cost time extensions should be submitted only under the most unusual circumstances.

Requests for no-cost extensions must be received at least 45 days prior to the expiration date of the grant, signed by both the Project Director and the Authorized Organizational Representative. The letter must fully justify the need for the extension, provide a summary of progress to date, include an estimate of the unobligated funds remaining, and describe a plan for the use of unobligated funds. This plan must coincide with the original or amended objectives of the project. The sole fact that funds remain at the expiration of an award is not justification for an extension.

## PROJECT REPORTING REQUIRMENTS

The Foundation's simplified grant reporting procedures are set forth as follows in Important Notice No. 73 (May 8, 1978):

1. Two copies of the Final Project Report (NSF Form 98A, revised May 1978) are to be submitted by the project director within 90 days after expiration of the award to:

National Science Foundation
Division of Grants and Contracts
Post-Award Projects Branch
Washington, D.C. 20550

The purpose of a final report is two-fold. It provides, for the record a factual account of the project, and it also provides an opportunity for an assessment of the effectiveness of the activity and of the NSF program through which the project was supported.

2. There is no standard form for the technical description of the project and results (Form 98A, III), but a narrative account is preferred. It should contain a covering letter and a table of equipment substitutions and additions. It should be typed on standard size (8" x 10½" or 8½" x 11") paper, unbound, but stapled in the upper left hand corner.

The technical information should be submitted directly to the ISEP program manager within 90 days after the expiration of the award.
The following suggestions indicate some of the points to include in the report:

a. Covering Letter:

In this part of the final report, the project director should feel free to comment on those considerations relevant to the purpose of the grant which are judged to be important. The Foundation is especially interested in such features of the program as:

(1) The instructional improvement that has been accomplished through the aid of this grant;

(2) other impacts the project has had at the institution;

(3) problems which have arisen in carrying out this project;

(4) improvements the Foundation might make in its program operations or policies;

(5) degree to which the transfer of Federal excess property assisted the institution in advancing the objectives of the grant.

b. Table of Equipment Substitutions and Additions:

If no modifications were made during the life of the grant, a definite statement to that effect should be attached to the covering letter. Otherwise, a separate table of equipment substitutions and additions should be attached. This table should list *only* those items changed or added. A copy of the Summary Report Form appears on page 24 of this Guide.

3. Final expenditure information, also required for each completed grant, is provided through the quarterly Federal Cash Transactions Report (FCTR, formerly known as the Quarterly Expenditures Report). The Foundation's computerized version of FCTR is forwarded to the fiscal officer of each grantee institution by the Foundation's Division of Financial and Administrative Management (DFA) in the month following the close of each calendar quarter. Procedures for reporting are sent to grantees at the time an awad is made. Completed Federal Cash Transactions Reports are returned to:

Division of Financial and
Administrative Management
National Science Foundation
Washington, D.C. 20550

## ACKNOWLEDGMENT AND DISCLAIMER

An acknowledgment of NSF support and a disclaimer must appear in any publication of any material, whether copyrighted or not, based on or developed under an NSF-supported project, in the following terms:

> "This material is based upon work supported by the National Science Foundation under Grant No. (Grantee should enter NSF grant number."

All materials, except scientific articles or papers published in scientific journals, must also contain the following:

> "Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the National Science Foundation."

## GOVERNMENT EXCESS PROPERTY

Grantees are eligible to acquire government excess property (scientific equipment and supplies) through no-cost transfers from the Federal Government to the grantee institution. Those not acquainted with this procedure should request a copy of NSF Important Notice No. 58 and a supply of Form SF 122 from the Project Property Section, Division of Grants and Contracts, National Science Foundation, Washington, D.C. 20550. The total value of the property to be acquired under a grant is normally limited to the amount of the grant.

## TITLE TO EQUIPMENT

Unless otherwise specified in the grant letter, title to equipment purchased or fabricated with NSF grant funds shall vest in the grantee institution, with the understanding that such equipment (or a suitable replacement obtained as a trade-in) will remain in use for the specific project for which it was obtained.

# VII. APPENDIX OF STANDARD FORMS

## UNDERGRADUATE INSTRUCTIONAL IMPROVEMENT PROGRAM

### Instructional Scientific Equipment–ISEP

### *INDIVIDUAL REVIEWER FORM*

### Instructions for Completing Form

- Do not fold or separate sheets while completing form.
- Complete the panel and project identification blocks.

DRAFT

**SECTION A:**

Check your response to the FINDING about conformance of the proposal to the Guidelines.
Register your response to each consideration under RATING (items 1 through 8.)

**SECTION B:**

Please provide written comments reflecting the technical and other considerations that led to your rating or to the budget changes you recommend (items 9 through 12.)

**SECTION C:**

*AFTER COMPLETING ALL OF THE ABOVE STEPS, ASSIGN A SINGLE NUMBER SCORE USING THE CRITERIA LISTED BELOW:*

7 –Clearly a most outstanding proposal; one which definitely should be funded.

6 –Very good proposal; one which should be funded if at all possible.

5 –Good proposal; one which is thoroughly meritorious and well above average, and which you reluctantly would see declined in a very intense competition.

4 –Average proposal; one which has merit and is worthy of support, but which demonstrates no particularly remarkable characteristics which might warrant a higher priority.

3 –Fair proposal; one which has some merit, but about which you have substantial reservations. A borderline proposal even if ample funds are available to support all "meritorious" proposals.

2 –Poor proposal; one for which you wish to provide an active negative recommendation.

1 –Clearly one of the poorest proposals.

VERBATIM BUT ANONYMOUS COPIES OF REVIEWS, RATINGS AND ASSOCIATED CORRESPONDENCE WILL BE SENT ONLY TO THE PROJECT DIRECTOR ON REQUEST. SUBJECT TO THIS NSF POLICY AND APPLICABLE LAWS, INCLUDING THE FREEDOM OF INFORMATION ACT, 5 USC 552, REVIEWERS' COMMENTS WILL BE GIVEN MAXIMUM PROTECTION FROM DISCLOSURE.

# INSTRUCTIONAL SCIENTIFIC EQUIPMENT – ISEP
# INDIVIDUAL REVIEWER FORM

NATIONAL SCIENCE
FOUNDATION

## SECTION A. FINDING AND RATING

ISEP provides matching support for the purchase of scientific equipment which is necessary to implement well-planned new or improved courses in undergraduate science education. The purpose is to enhance the learning experience of undergraduate students by introducing them to important scientific or technological developments which can realistically be presented at the undergraduate level. The Finding is related to the eligibility and the Rating is related to quality. Please rate the two independently.

### FINDING

| | Yes | No | Maybe | Comment? |
|---|---|---|---|---|
| This proposal conforms to the ISEP Guide for Proposal Preparation and represents a reasonable response to it. | | | | |

### RATING

| | High | | | Low | Comment? |
|---|---|---|---|---|---|
| **NEED**: The degree to which | | | | | |
| 1. a significant undergraduate science education need is established within the local context. | ☐ | ☐ | ☐ | ☐ | |
| **PROJECT DESCRIPTION**: The degree to which | | | | | |
| 2. the project objectives are consistent with the established need. | ☐ | ☐ | ☐ | ☐ | |
| 3. the equipment and procedures are likely to achieve the objectives. | ☐ | ☐ | ☐ | ☐ | |
| **EQUIPMENT**: The degree to which | | | | | |
| 4. the project requests equipment that complements current institutional holdings. | ☐ | ☐ | ☐ | ☐ | |
| 5. the requested equipment is appropriate in terms of cost and anticipated use. | ☐ | ☐ | ☐ | ☐ | |
| 6. the plans for equipment care and maintenance are adequate. | ☐ | ☐ | ☐ | ☐ | |
| **PERSONNEL**: The degree to which | | | | | |
| 7. the faculty have the expertise and the time to implement the project plan successfully. | ☐ | ☐ | ☐ | ☐ | |
| **EVALUATION**: The degree to which | | | | | |
| 8. reasonable provision is made for assessing the effectiveness of the plan. | ☐ | ☐ | ☐ | ☐ | |

## SECTION B. COMMENTS AND JUSTIFICATION

9. General comments and explanation of ratings or comments given above, especially negative ones.

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10. Recommended budget deletions (and reasons therefor)

11. Recommended budget substitutions (and reasons therefor)

12. Suggestions for improvement of the proposal

## SECTION C. PROPOSAL RECOMMENDATION SCORE

| INITIAL | FINAL |
|---|---|
| 7 HIGH – 1 LOW | 7 HIGH – 1 LOW |
| | |

| | | |
|---|---|---|
| PROJECT INSTITUTION | PROJECT DIRECTOR | PROPOSAL NO. |

| | |
|---|---|
| REVIEWER NAME AND NUMBER | PANEL NUMBER |

## Panel Summary Form

| | | |
|---|---|---|
| PROJECT DIRECTOR | INSTITUTION | PROPOSAL NUMBER<br>SPI- |

General Recommendations and comments (especially desirable):

Verbatim but anonymous copies of reviews, ratings and associated correspondence will be sent only to the principal investigator/project director on request. Subject to this NSF policy and applicable laws, including the Freedom of Information Act, 5 USC 552, reviewers' comments will be given maximum protection from disclosure.

| | | | | | | |
|---|---|---|---|---|---|---|
| Individual Panelist Scores | | | | | | Total Score |
| | | | | | | |
| Panelist Number | | | | | | |

| | |
|---|---|
| PANEL LEADER | PANEL NUMBER |

NSF Form SE-OT-26 (10-78)

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# PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION

## Cover Page

FOR CONSIDERATION BY NSF ORGANIZATIONAL UNIT
(Indicate the most specific unit known, i.e. program, division, etc. )
Instructional Scientific Equipment
Program - ISEP

ARE ANY FUNDS IN THIS PROPOSAL BEING REQUESTED ELSEWHERE IN NSF OR IN ANOTHER FEDERAL AGENCY
YES ☐ NO ☐ IF YES, EXPLAIN UNDER REMARKS.

PROGRAM ANNOUNCEMENT/SOLICITATION NO.: SE 79-32

CLOSING DATE (IF ANY): March 2, 1979

NAME OF SUBMITTING ORGANIZATION TO WHICH AWARD SHOULD BE MADE (INCLUDE BRANCH/CAMPUS/OTHER COMPONENTS)

ADDRESS OF ORGANIZATION (INCLUDE ZIP CODE)

TITLE OF PROPOSED PROJECT

$ REQUESTED FROM NSF

$ LOCAL CONTRIBUTION

$ TOTAL PROJECT COSTS

PROPOSED DURATION

DESIRED STARTING DATE

PI/PD NAME AND SOCIAL SECURITY NO. (SSN)*

PI/PD PHONE NO.
OFFICE:
HOME:

PI/PD DEPARTMENT

PI/PD ORGANIZATION

ADDITIONAL PI/PD AND SSN*

ADDITIONAL PI/PD AND SSN*

ADDITIONAL PI/PD AND SSN*

ADDITIONAL PI/PD AND SSN*

REMARKS:

*Submission of social security numbers is voluntary and will not affect the organization's eligibility for an award. However, they are an integral part of the NSF information system and assist in processing the proposal. SSN solicited under NSF Act of 1950, as amended.

| PRINCIPAL INVESTIGATOR/ PROJECT DIRECTOR | AUTHORIZED ORGANIZATIONAL REP. | OTHER ENDORSEMENT (optional) |
|---|---|---|
| NAME (Prof., Dr., Mr., Ms.) | NAME (Prof., Dr., Mr., Ms.) | NAME (Prof., Dr., Mr., Ms.) |
| SIGNATURE | SIGNATURE | SIGNATURE |
| TITLE | TITLE | TITLE |
| DATE | DATE | DATE |

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## NATIONAL SCIENCE FOUNDATION

## UNDERGRADUATE SCIENTIFIC EQUIPMENT PROGRAM

### Project Summary Form

1. NAME OF INSTITUTION

2. ADDRESS OF INSTITUTION (INCLUDE BRANCH/CAMPUS & COMPONENT)

3. PRINCIPAL INVESTIGATOR

4. MAJOR DISCIPLINE CODE

5. FIELD OF SCIENCE AND ENGINEERING CODE(S)

6. THIS PROJECT IS PRINCIPALLY AIMED AT STUDENTS EXPECTED TO PURSUE CAREERS:

☐ A. AS SCIENTISTS ☐ B. AS PRE-COLLEGE SCIENCE TEACHERS ☐ C. IN FIELDS NOT DIRECTLY SCIENCE RELATED

7. HIGHEST DEGREE OFFERED IN SCIENCE BY ANY DEPARTMENT ON THE CAMPUS SUBMITTING THIS PROPOSAL.

CHECK ONE: ASSOCIATE ☐ BACCALAUREATE ☐ MASTER ☐ DOCTOR ☐ OTHER, SPECIFY

8. TYPE OF INSTITUTION ☐ PUBLIC ☐ PRIVATE ☐ CONSORTIUM

9. TITLE OF PROJECT

10. SUMMARY OF PROPOSED WORK

11. INSTITUTION'S OPENING FTE UNDERGRADUATE FALL ENROLLMENT AS REPORTED IN FALL ENROLLMENT IN HIGHER EDUCATION 1976, NATIONAL CENTER FOR EDUCATION STATISTICS, NCES# 78-310 ____________.

12. NUMBER OF STUDENTS TO BE AFFECTED BY THE PROJECT OVER A 5-YEAR PERIOD ____________.

13. FROM 12, ESTIMATE THE NUMBER:

A. TO TERMINATE SCIENTIFIC STUDIES WITH THE ASSOCIATE DEGREE ____________.

B. TO TERMINATE SCIENTIFIC STUDIES WITH THE BACCALAUREATE DEGREE ____________.

C. TO CONTINUE SCIENTIFIC STUDIES BEYOND THE BACCALAUREATE DEGREE ____________.

D. TO ENTER SCIENCE TEACHING CAREERS AT THE JUNIOR ______ OR SENIOR ______ HIGH SCHOOL LEVEL.

**BEST DOCUMENT AVAILABLE**

BEST DOCUMENT AVAILABLE

## Directions and Codes for Completion of Line 4 on Cover Sheet

N. B. THE FOLLOWING DESIGNATIONS SERVE TO ASSIST THE FOUNDATION IN ASSIGNING REVIEWERS AND OBTAINING GENERAL DATA.

**Field of Science and Engineering Codes**: Please identify the specific subject(s) in the proposal on line 5, Project Summary Form.

### CHEMISTRY

| | |
|---|---|
| CA12 | Analytical |
| CB12 | Environmental Sciences (Chemistry) |
| CC12 | General Chemistry |
| CD12 | Organic |
| CE12 | Physical |
| CF12 | Chemistry, other (specify) |

### COMPUTER SCIENCE

| | |
|---|---|
| TA | Theoretical Computer Science |
| TB | Software Systems Science |
| TC | Software Engineering |
| TD | Intelligent Systems |
| TE | Computer Systems Design |
| TF | Computer Science, other (specify) |

### EARTH SCIENCES

| | |
|---|---|
| EA49 | Environmental Sciences (Earth Sciences) |
| EB42 | Geochemistry |
| EC42 | Geography (physical) |
| ED42 | Geology |
| EF42 | Geophysics |
| EG49 | Earth Sciences, other (specify) |

### ENGINEERING

| | |
|---|---|
| NA51 | Aeronautical |
| NB59 | Bioengineering |
| NC53 | Chemical |
| ND54 | Civil |
| NE55 | Electrical or Computer |
| NF56 | Engineering Science |
| NG59 | Environmental Sciences (Engineering) |
| NH56 | Industrial |
| NL57 | Materials |
| NM57 | Metallurgical |
| NN59 | Nuclear |
| NO59 | Petroleum |
| NP59 | Sanitary |
| NQ59 | Engineering, other (specify) |

### LIFE SCIENCES

| | |
|---|---|
| BA69 | Agriculture |
| BB62 | Anatomy |
| BC61 | Botany (incl. Plant Physiology) |
| BD61 | Cellular Biology |
| BE61 | Ecology |
| BF61 | Entomology |
| BG49 | Environmental Sciences (Life) |
| BH61 | General Biology |
| BI61 | Genetics |
| BJ61 | Horticulture |
| BK63 | Microbiology |
| BL61 | Molecular Biology |
| BM63 | Physiology |
| BN61 | Soil Science |
| BO61 | Zoology |
| BP63 | Life Sciences, other (specify) |

### MATHEMATICAL SCIENCES

| | |
|---|---|
| MA21 | Algebra or Number Theory |
| MB21 | Applications of Mathematics (incl. Biometrics & Biostatistics) |
| MC21 | Calculus |
| MD21 | Computer Science |
| ME21 | Geometry |
| MF21 | Intro. College Mathematics |
| MG21 | Logic or Foundations of Mathematics |
| MH21 | Probability and Statistics |
| MI21 | Mathematics, other (specify) |

### PHYSICAL SCIENCES

| | |
|---|---|
| ZA11 | Astronomy |
| ZB42 | Atmospheric Sciences (excl. Meteorology) |
| ZC42 | Metallurgy (excl. Met. Engr.) |
| ZD41 | Meteorology |

### PHYSICS

| | |
|---|---|
| PA13 | Acoustics |
| PB13 | Atomic and Molecular |
| PC13 | Environmental Sciences (Physics) |
| PD13 | General Physics |
| PE13 | Nuclear |
| PF13 | Optics |
| PG13 | Solid State |
| PH13 | Theoretical Physics |
| PI13 | Physics, other (specify) |

### PSYCHOLOGY (excluding clinical)

| | |
|---|---|
| YA79 | Developmental |
| YB72 | Environmental Sciences (Behavioral) |
| YC71 | Experimental, Comparative or Physiological |
| YD79 | General Psychology |
| YE79 | Psychometrics |
| YF72 | Social |
| YG79 | Psychology, other (specify) |

### SOCIAL SCIENCES

| | |
|---|---|
| SA81 | Anthropology (specify) |
| SB89 | Archaeology |
| SC82 | Economics (excl. Bus. Admin.) |
| SD89 | Environmental Sciences (Social) |
| SE89 | Geography (other than physical) |
| SF83 | History and Philosophy of Science |
| SG84 | Linguistics |
| SH85 | Political Science |
| SI89 | Sociology (not incl. social work) |
| SJ89 | Social Sciences, other (specify) |

---

**Major Discipline Classification**: Please classify the proposal according to the following major group(s).

The appropriate code should appear on line 4, Project Summary Form.

| | |
|---|---|
| BZ | (Biology): Any subjects in category of "Life Sciences" |
| CH | (Chemistry) |
| CS | (Computer Science) |
| ED | (Education-science teacher training) |
| EN | (Engineering) |
| EZ | (Earth Sciences) |
| IN | (Inter-and Multidisciplinary Sciences) |
| MA | (Mathematics): other than computer science |
| PS | (Psychology) |
| PY | (Physics) |
| SZ | (Social Sciences): any subjects in category of "Social Science" |
| ZZ | (Other Science) |

**NATIONAL SCIENCE FOUNDATION**
***Office of the Director***
**Washington, D.C. 20550**

Notice No. 73 May 8, 1978

# IMPORTANT NOTICE
# TO
# PRESIDENTS OF UNIVERSITIES AND COLLEGES AND HEADS OF OTHER NATIONAL SCIENCE FOUNDATION GRANTEE ORGANIZATIONS

*Subject:* **Further Simplification of NSF Reporting Requirements and Enforcement of these Requirements**

For some time, the National Science Foundation has required three reports for all completed grants: a Financial Status Report; a Summary of Completed Project; and a Final Technical Report. In 1977, the Foundation announced a proposed simplification of final fiscal reporting through the use of NSF's computerized Federal Cash Transactions Report which is distributed quarterly for completion by grantees. I am pleased to note that the new reporting system received very favorable comments from grantees. It has just been implemented with the FCTR for the period ending March 31, 1978 and individual Financial Status Report forms are no longer required.

A final technical report has been a long-standing requirement for NSF awards. It contains the scientific information needed by NSF program managers to monitor the results of projects within their areas of responsibility. The Summary of Completed Project was introduced in 1976 as a mechanism for informing the Congress and the general public about the results of NSF-funded research. In addition to being supplied to the Congress and the public in response to requests for information, the abstracts are published annually.

Along with our review of fiscal reporting in 1977, we initiated a review of the data elements required by NSF in the Summary of Completed Project and the final technical report with a view to simplifying these requirements as well. The review indicated that some of the information required in the two reports is identical or similar. Accordingly, we have now redesigned the formats of these reports to combine the common elements into a single form. Copies of the new format and the associated instructions are attached for local reproduction and immediate use. Along with a reduction in duplicate reporting elements, the new form recognizes the fact that some information may not be available at the same time the report is due. The form provides blocks for the principal investigator to check to indicate the submission status of these items.

With this change, the Foundation considers it has reduced its reporting requirements to an absolute minimum consistent with adequate accountability for the use of public funds. We have tried to make the reporting as simple and convenient as possible. Principal Investigators and grantee institutions have an obligation to carry out these requirements in a timely and careful manner. Overdue reports not only raise questions about accountability, but divert resources from productive activities to expensive followup activities.

NSF will require compliance with these simplified reporting requirements; final fiscal information through submission of the FCTR; information on project results through submission of the Final Project Report. In addition to telephone calls, reminder correspondence, and visits by NSF staff to review grantee recordkeeping problems, the Division of Grants and Contracts will monitor overdue report submissions to assure that these two requirements have been fulfilled on prior, expired awards before new awards are made.

Some NSF awards contain requirements for unique reports or other end products. Special provisions for such requirements are included in the award instrument. Nothing in this Notice should be construed as waiving such provisions.

Finally, the Foundation appreciates the comments and suggestions for additional paperwork improvements in response to Important Notice No. 65. Some of these suggestions have been adopted and will be reflected in future editions of NSF program brochures and the Grant Policy Manual.

Richard Atkinson

Richard C. Atkinson
Director

Attachments

**NATIONAL SCIENCE FOUNDATION**
**Washington, D.C. 20550**

# FINAL PROJECT REPORT
**NSF FORM 98A**

*PLEASE READ INSTRUCTIONS ON REVERSE BEFORE COMPLETING*

## PART I–PROJECT IDENTIFICATION INFORMATION

| | | |
|---|---|---|
| 1. Institution and Address | 2. NSF Program | 3. NSF Award Number |
| | 4. Award Period<br>From To | 5. Cumulative Award Amount |

6. Project Title

## PART II–SUMMARY OF COMPLETED PROJECT *(FOR PUBLIC USE)*

## PART III–TECHNICAL INFORMATION *(FOR PROGRAM MANAGEMENT USES)*

| 1. ITEM *(Check appropriate blocks)* | NONE | ATTACHED | PREVIOUSLY FURNISHED | TO BE FURNISHED SEPARATELY TO PROGRAM | |
|---|---|---|---|---|---|
| | | | | Check (√) | Approx. Date |
| a. Abstracts of Theses | | | | | |
| b. Publication Citations | | | | | |
| c. Data on Scientific Collaborators | | | | | |
| d. Information on Inventions | | | | | |
| e. Technical Description of Project and Results | ▨ | | | | |
| f. Other *(specify)* | ▨ | | | | |

| | | |
|---|---|---|
| 2. Principal Investigator/Project Director Name *(Typed)* | 3. Principal Investigator/Project Director Signature | 4. Date |

Form Approved OMB No. 99R0013

BEST DOCUMENT AVAILABLE

## INSTRUCTIONS FOR FINAL PROJECT REPORT
## (NSF FORM 98A)

This report is due within 90 days after the expiration of the award. It should be submitted in two copies to:

National Science Foundation
Division of Grants and Contracts
Post-Award Projects Branch
1800 G Street, N.W.
Washington, D.C. 20550

### INSTRUCTIONS FOR PART I

These identifying data items should be the same as on the award documents.

### INSTRUCTIONS FOR PART II

The summary (about 200 words) must be self-contained and intelligible to a scientifically literate reader. Without restating the project title, it should begin with a topic sentence stating the project's major thesis. The summary should include, if pertinent to the project being described, the following items:

- The primary objectives and scope of the project.
- The techniques or approaches used only to the degree necessary for comprehension.
- The findings and implications stated as concisely and informatively as possible.

This summary will be published in an annual NSF report. Authors should also be aware that the summary may be used to answer inquiries by nonscientists as to the nature and significance of the research. Scientific jargon and abbreviations should be avoided.

### INSTRUCTIONS FOR PART III

Items in Part III may, but need not, be submitted with this Final Project Report. Place a check mark in the appropriate block next to each item to indicate the status of your submission.

a. Self-explanatory.
b. For publications (published and planned) include title, journal or other reference, date, and authors. Provide two copies of any reprints as they become available.
c. Scientific Collaborators: provide a list of co-investigators, research assistants and others associated with the project. Include title or status, e.g. associate professor, graduate student, etc.
d. Briefly describe any inventions which resulted from the project and the status of pending patent applications, if any.
e. Provide a technical summary of the activities and results. The information supplied in proposals for further support, updated as necessary, may be used to fulfill this requirement.
f. Include any additional material, either specifically required in the award instrument (e.g. special technical reports or products such as films, books, studies) or which you consider would be useful to the Foundation.

## REQUEST FOR MAJOR CHANGE IN APPROVED EQUIPMENT PURCHASE LIST

GRANT NUMBER

**TO :**

Instructional Scientific Equipment - ISEP
National Science Foundation
Washington, D.C. 20550

**FROM :** (Name, Department, Institution, City & State, and ZIP Code)(please type)

As Project Director of the above referenced grant, I request Foundation approval of a major change in the approved equipment purchased list as follows. Justification for this change appears on the reverse side of this form.

**Deletions:**

| Item | Cost |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |

( ) See attached sheet for additional items to be deleted. (original and 3 copies)

**Additions:**

| Item | Cost |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |

( ) See attached sheet for additional items to be added. (original and 3 copies)

(Signature of Business Officer) (Date) (Signature of Project Director) (Date)

**(FOUNDATION USE ONLY:)**

The above changes *not lined out* are hereby authorized with the understanding that this approval does not increase the amount of the grant. Any changes *lined out* are disapproved for the following reasons:

☐ Justification inadequate. Grantee may resubmit request with more adequate justification.
☐ Request unclear. Grantee may resubmit request with clarification.
☐ Requested changes appear to detract from the intent or to reduce the educational value of the project as originally approved.

Not valid without NSF Approval Stamp and signature.

NSF Form 650, Oct. 1971

(Please submit in original and three copies. Form may be duplicated)

BEST DOCUMENT AVAILABLE

## REQUEST FOR MAJOR CHANGE IN APPROVED EQUIPMENT PURCHASE LIST (Continued)

**JUSTIFICATION:** *(Please submit in original and three copies, Form may be duplicated)*

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